

BV 1078852  
ON TROPICOS:  
names, types

# BOTANICAL GAZETTE

FEBRUARY, 1895.

## New or noteworthy Compositæ from Guatemala.

JOHN M. COULTER.

WITH PLATES V AND VI.

Capt. John Donnell Smith has submitted to me his recent collections of Compositæ from Guatemala, and the following results are thought worthy of publication. All of the most critical material was taken to the Gray Herbarium and Library for final study, where every facility for work was provided through the courtesy of the curator, Dr. B. L. Robinson.

*VERNONIA CANESCENS* HBK. — Aquacatepec, Depart. Zacatepequez, alt. 4,300<sup>ft</sup>, March 1892, *John Donnell Smith* 2,837. Apparently quite common from Peru and Venezuela to Panama. Reported also from Nicaragua (*Wright*) and Huasteca (*Ervendberg*). Very closely related to *V. geminata* Less. of Brazil, and often confounded with *V. arborescens* Sw. of Central America.

*Vernonia Luxensis*, n. sp. — A shrub 3<sup>m</sup> high, glabrous except more or less pubescence in the inflorescence which forms large pyramidal clusters of more or less leafy panicles: leaves oval, tapering at both ends and petioled, upper ones often narrower, entire or obscurely toothed: involucre scales in five or six rows, innermost ones linear-oblong and often quite elongated, the outer ones gradually passing into much broader and shorter forms, all sharp pointed and membranous except for the greenish center and tip: heads 3 or 4-flowered, cylindrical, more or less pedicellate: achenes strigose pubescent, often densely so. — Santa Rosa, Depart. Santa Rosa, alt. 3-4,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,421.

Very nearly related to *V. Palmeri* Rose from Alamos (N. W. Mexico), but differing in pubescence, leaves and involucre scales.



**Vernonia Heydeana**, n. sp. Like the last; but lower (2<sup>m</sup> high), with broader leaves which are often not so taper-pointed at either base or apex, 6-flowered heads, involucre scales in but two or three much looser series and all of them obtuse, and glabrous achenes.—San Miguel Uspantán, Depart. Quiché, alt. 6–12,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3, 392.

The two preceding species, with *V. Palmeri* Rose, may all be forms of one shrubby species which extends the whole length of western Mexico. With the material at hand the forms are readily separated, but they give evidence of such close relationship that more abundant material may show intergradations.

**VERNONIA PATENS** HBK.—Santa Rosa, Depart. Santa Rosa, alt. 3,000<sup>ft</sup>, February 1893, *Heyde & Lux* 4, 524.—A South American shrub 2 to 3<sup>m</sup> high, heretofore not reported north of Panama, but likely to have been confounded with *V. Deppeana* Less.

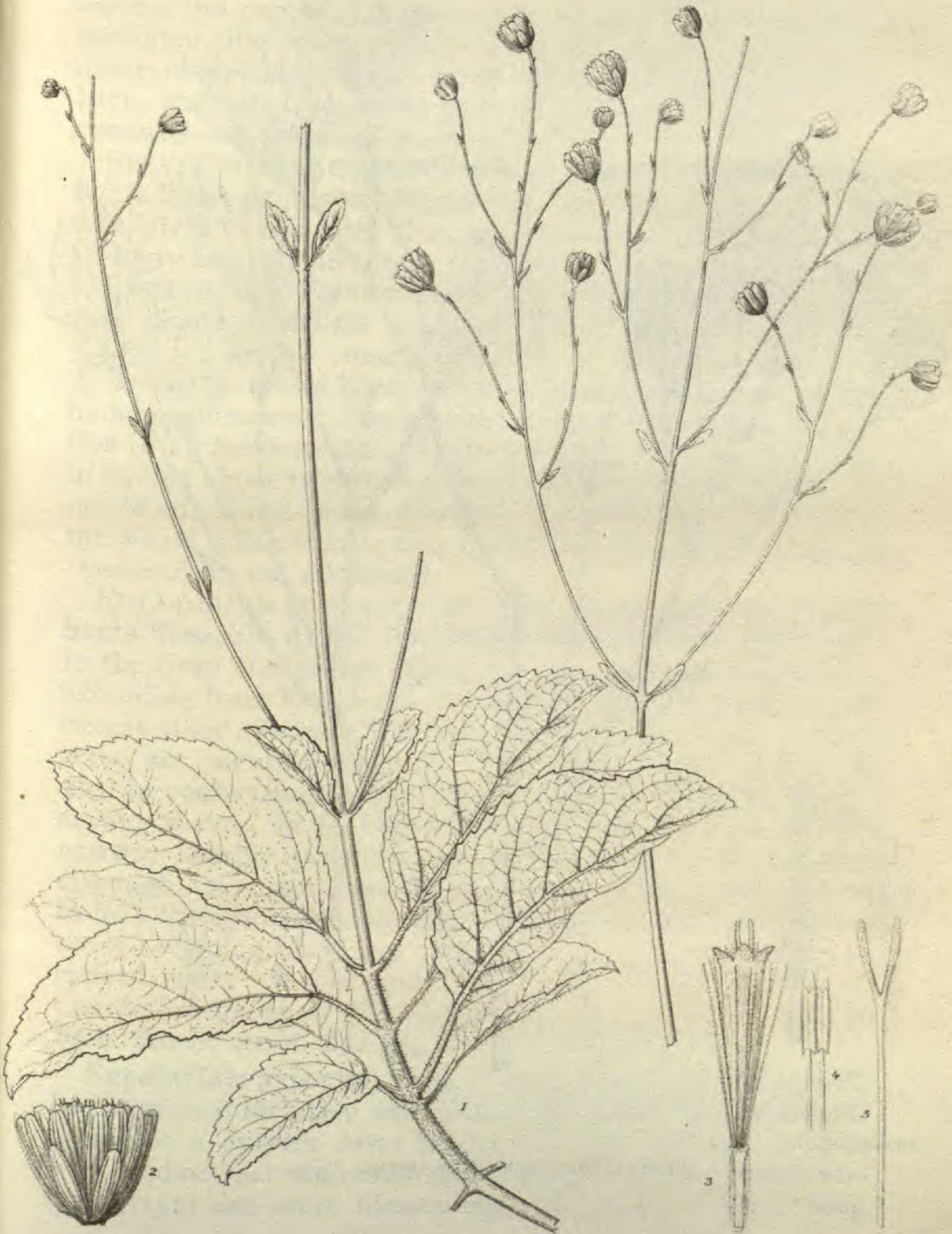
**Vernonia Shannoni**, n. sp.—A tree (height unreported): leaves long-oval, taper-pointed at each end, petioled, entire, glabrous: heads 5-flowered, somewhat closely corymbose and pedicellate: involucre scales in five or six rows, the inner ones elongated-oblong and obtuse, the outer ones becoming gradually shorter, more broadly ovate and acutish, all somewhat purplish-tinted and sparsely hairy on the margins: achenes glabrous.—“Continental divide,” Depart. San Marcos, alt. 9,191<sup>ft</sup>, January 1892, *W. C. Shannon* 605.

The material is very scanty, but seems sufficient for characterization and subsequent recognition. Apparently very nearly related to *V. liatroides* DC. and *V. serratuloides* HBK., but they are herbaceous. Mr. Shannon notes the tree as being “white-flowered.”

**Ageratum rugosum**, n. sp.—More or less rough pubescent throughout: leaves short petioled, ovate, crenate, acuminate, thickish (almost coriaceous), somewhat scabrous above and more softly and abundantly hairy beneath especially along the prominent reticulations, 5 to 7<sup>cm</sup> long: heads purple-flowered, the linear involucre scales with slender often elongated acuminations: pappus of five lanceolate scales, but one, two or three of which taper into awns: achenes very glabrous.—Santa Rosa, Depart. Santa Rosa, alt. 3,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4, 243.

The whole habit of this species is that of *A. corymbosum*



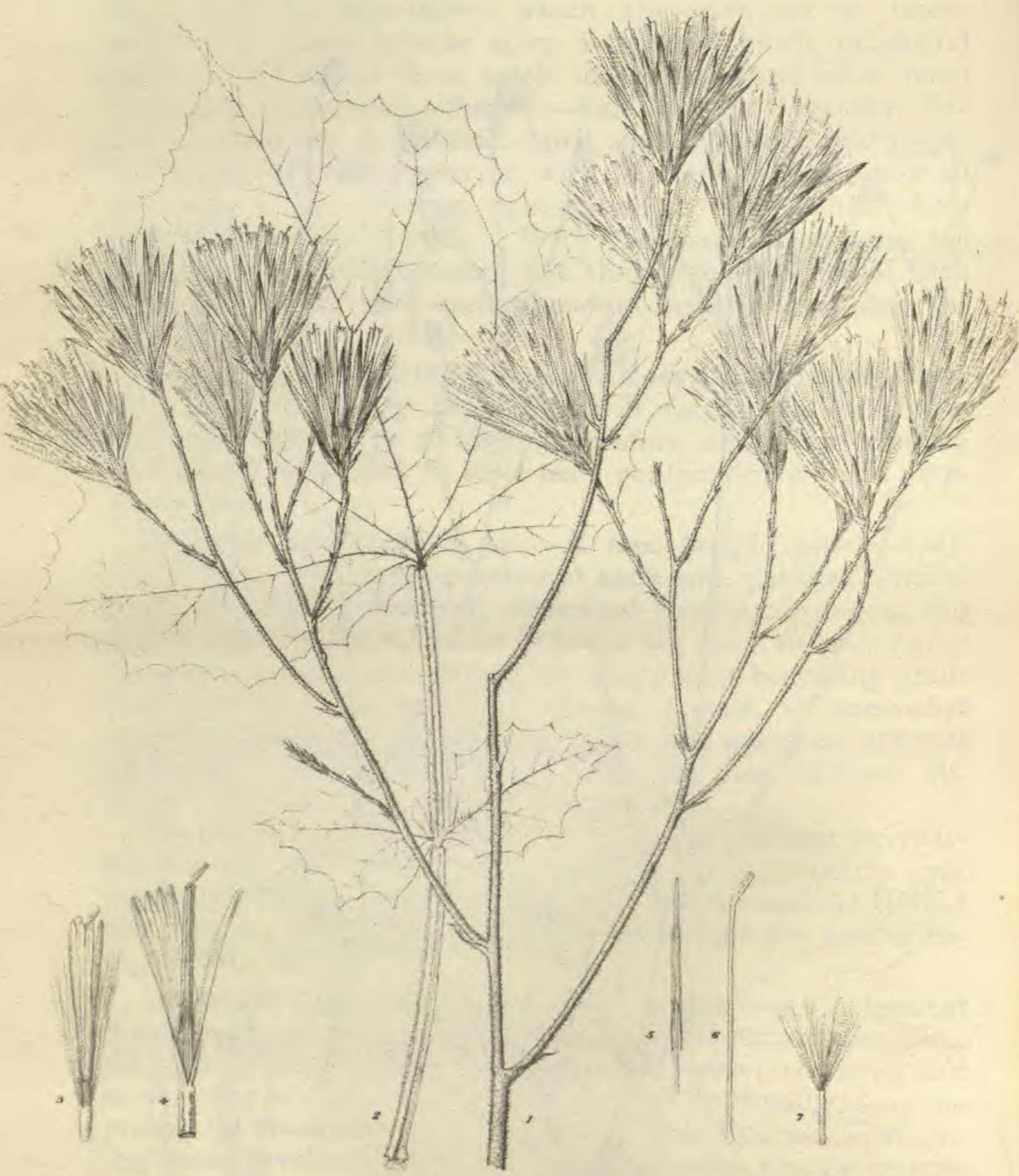


C. E. Faxon, del.

B. Meisel, Lith. Boston.

MALLINOA CORYMBOSA, Coult.





C. E. Faxon, del.

*PEREZIOPSIS DONNELL-SMITHII*. Coult.

B. Meehl, Lith. Boston.



Zucc., to which doubtless it has often been referred; but its pappus refers it at once to EUAGERATUM and near to *A. conyzoides* L., from which species it differs in general habit, leaves, and pappus. I have seen an unnamed West Indian specimen all of whose pappus scales are not awned, but whose other characters refer it more nearly to *A. muticum* Grisebach, and which probably represents a form intermediate between *A. muticum* and *A. conyzoides*.

STEVIA NEPETAEFOLIA HBK. (?)—Ojo de Agua, Depart. Santa Rosa, alt. 3,500<sup>ft</sup>, September 1892, *Heyde & Lux* 3,780. The plant is evidently this species, but the leaves are less strongly toothed and less pubescent than in the usual form.

EUPATORIUM EHRENBERGII Hemsley.—Santa Rosa, Depart. Santa Rosa, alt. 3–4,000<sup>ft</sup>, March 1892, *Heyde & Lux* 3,427. A species closely related to *E. Benthamii* Klatt and *E. septuplinervium* Klatt, but those species have much more numerous flowers. Our specimens differ from Klatt's description of *Hebeclinum Ehrenbergii* Sch. Bip. (Flora, 1885, 202) in having about twenty-five flowers instead of fifty, and in the involucre scales being decidedly glandular tomentose, as is the whole inflorescence, and inclined to be obtuse, instead of "puberulent and acuminate."

EUPATORIUM FILICAULE Sch. Bip.—Jumaytepeque, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4,234. In the Gray Herbarium there are specimens of this species extending from Venezuela (*Fendler*) to Orizaba, Mexico. A closely allied species in Chihuahua is *E. Palmeri* Gray. A character not mentioned by Dr. Gray (Proc. Amer. Acad. 21: 383) in contrasting the two species may be of service in separating them. In *E. Palmeri* the involucre scales are very narrow, sharply pointed and entire; while in *E. filicaule*, although there are similar scales, most of the scales are apt to be a little broader and more or less toothed at apex, sometimes becoming blunt and with broad more or less toothed or incised apex. In our specimens the heads are 12-flowered. Characterizations of this species will be found not only in Proc. Amer. Acad. 21: 383, but also l. c. 27: 170.

*Eupatorium griseum*, n. sp. Whole plant (including both leaf surfaces) hirsutely and somewhat glandular pubescent, giving it a grayish cast: leaves opposite, perfectly cordate with a somewhat acuminate apex, sharply dentate, lower surface grayer and more hirsute than the upper, 8 to 10<sup>cm</sup> long



by 7 to 8<sup>cm</sup> broad, rather long-petioled below, becoming sessile and much reduced towards and in the inflorescence which is open and comparatively few-headed: heads rather large (12<sup>mm</sup> high), more than 20-flowered: involucreal scales obtuse, glandular pubescent on the back and apt to be purplish-tinged, the inner narrower ones occasionally acutish, all conspicuously striate-nerved: achenes minutely pubescent on the sharp angles. ✓—Casillas, Depart. Santa Rosa, alt. 4,000<sup>ft</sup>, December 1892, *Heyde & Lux* 4, 250.

In De Candolle's § SUBIMBRICATA, with the large-headed Brickellia-like forms, such as *E. Parryi* Gray and *E. Fendleri* Gray, but more nearly related to the South American *E. urticæfolia* L.

EUPATORIUM GUADALUPENSE Spr.—Rinconcito, Depart. Santa Rosa, alt. 4,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4, 206. This widely distributed species has gone under the name of *E. paniculatum* Schrad. in the West Indies, *E. Sinclairii* Benth. in Central America, and *E. Guadalupe* Spr. on Guadalupe Island.

EUPATORIUM HEBEBOTRYA (DC.) Hemsley.—Chiapas, Depart. Santa Rosa, alt. 3,500<sup>ft</sup>, December 1892, *Heyde & Lux*. A species of Costa Rica, and apparently reported but once from Mexico (*Haenke*).

EUPATORIUM PAUPERCULUM Gray.—Santa Rosa, Depart. Santa Rosa, alt. 4,000<sup>ft</sup>, December 1892, *Heyde & Lux* 4, 194. This species was first discovered in Arizona, then in Sonora, and now in Guatemala. The Arizona material, from which the original description was drawn, proves to be not at all representative. The Sonoran and Guatemalan specimens are more or less pubescent, with lanceolate (in the Guatemalan specimens very narrowly so) long acuminate leaves with tapering base and sharply toothed in the middle, loose almost diffuse inflorescence, and corolla more often pink than white.

EUPATORIUM POPULIFOLIUM HBK.—Volcan Tecuamburro, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, February 1893, *Heyde & Lux* 4, 521. This material has achenes somewhat pubescent. Evidently a very variable species in foliage, the leaves varying from lanceolate with attenuate base to very broad ovate with either truncate or cordate base. *Heyde & Lux* 2, 840, from San Felipe, Depart. Retalhulen, alt. 2,050<sup>ft</sup>, April 1892, has the usual glabrous achenes, and is reported as a showy virgate plant 14<sup>ft</sup> high.



**EUPATORIUM PYCNOCEPHALUM** Less.—Santa Rosa, Depart. Santa Rosa, alt. 3–4,000<sup>ft</sup>, May and November 1892, *Heyde & Lux* 3,406 in part and 4,229; Jumaytepeque, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, January 1893, *Heyde & Lux* 4,219; San Miguel Uspantán, Depart. Quiché, alt. 6–12,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,397. Evidently the same as *E. Schiedeianum* Schrad. Very variable in foliage, but the intergradations are so complete that no varietal distinctions can be drawn. The variations extend from narrowly lanceolate with long acuminate apex to cordate ovate and even rotund towards and in the inflorescence. Reported to be a little more than three feet high.

**EUPATORIUM SCHULTZII** Sch. Bip.—Teocinte, alt. 2,500<sup>ft</sup>, February 1893, *Heyde & Lux* 4,515. Entirely too near *E. malvaefolium* DC., and the two should probably be merged. The present material has the involucre scales of *E. Schultzii*, but the heads are more than 20-flowered, as in *E. malvaefolium*, a larger number than is credited to the former species. Reported as nine feet high.

**Eupatorium vernonioides**, n. sp. of OSMIA.—Shrubby and leafy, with the general aspect of a *Vernonia*, more or less glandular pubescent in the region of the inflorescence and apt to be sparsely so upon the leaf veins (especially beneath), otherwise glabrous: leaves short-petioled, thickish but hardly coriaceous, lanceolate with tapering base and apex (perhaps the lower leaves broader and more rounded at base), entire or obscurely mucronulate-toothed, with prominent midrib and conspicuously reticulated beneath, dark green and somewhat shining above, paler and often reddish tinged beneath, 15 to 20<sup>cm</sup> long, 2.5 to 4.5<sup>cm</sup> broad: heads rather numerous in the open somewhat leafy cymes, about 9<sup>mm</sup> high and 40- to 60-flowered: lower scales of the cylindrical or urn-shaped involucre short and broad, with ciliate margins and glandular pubescence on the back, upwards becoming gradually narrower, longer, more delicate, less glandular and ciliate until the innermost linear scales are almost smooth; all obtuse except a short apiculation of the innermost ones; the striations not distinct, but obscure and irregular, the outer scales especially inclined to a purplish tinting: achenes glabrous (poorly developed in the material at hand).—Cenaguilla, Depart. Santa Rosa, alt. 4,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4,240.

Related to *E. conyzoides* Vahl.



**Willugbaeya globosa**, n. sp.—A glabrous twiner or somewhat puberulent in the inflorescence: leaves ovate and acuminate, obtuse at base, with margins (which are obscurely mucronulate) revolute, 5-ribbed near the base and prominently cross-veined, long-petioled, blade 9 to 12<sup>cm</sup> long, 5 to 7<sup>cm</sup> broad: heads sessile in glomerate (head-like) clusters which are borne (one to seven in number, usually three or five) at the ends of the opposite somewhat wide-spreading branches of an elongated bracteate raceme: involucreal scales very short (about one-third as long as the corolla and pappus), broad and truncate (sometimes a little notched), glandular-puberulent at apex: pappus white: corolla narrowly funnel form: achenes glabrous (or very sparsely pubescent under a lens).—Santa Rosa, Depart. Santa Rosa, alt. 4,000<sup>ft</sup>, March 1892, *Heyde & Lux* 3,430.

This species is listed as *Mikania globosa* Coulter, n. sp. in the forthcoming part of John Donnell Smith's "Enumeratio Plantarum Guatemalensium," where it seemed desirable to make the nomenclature consistent with that of the other parts. The inflorescence is striking, with its display of globose heads, and the species resembles closely in habit and structure *Mikania smilacina* DC. of Brazil.

**WILLUGBAEYA SCANDENS** (L.) Kuntze. (*Mikania scandens* Willd.)—Santa Rosa, Depart. Santa Rosa, alt. 3-4,000<sup>ft</sup>, June 1892, *Heyde & Lux* 3,434. A form with purple flowers and reddish pappus, which is easily separated from the typical form, but which is referred by Hemsley to *M. scandens*.

**Coleosanthus Pacayensis**. (*Brickellia Pacayensis* Coulter).—Teocinte, Depart. Santa Rosa, alt. 2,500<sup>ft</sup>, January 1893, *Heyde & Lux* 4,218.

**ASTER SPINOSUS** Benth.—Santa Rosa, Depart. Santa Rosa, alt. 3-4,000<sup>ft</sup>, April and December 1892, *Heyde & Lux* 3,424 and 4,210. The development of the characteristic spiny branches in these Guatemalan forms is much stronger than in the forms heretofore collected in Northern Mexico and adjacent United States; a development that appears also in specimens from Costa Rica. The spines are often very strong and thick set, flattened like sword blades, 2.5 to 5<sup>cm</sup> long, evidently doing leaf-work, while the leaves are reduced to the merest rudiments, very different from the "soft subulate spines" of the more northern forms. The longer spines frequently branch.



In the original description Bentham questions the generic reference, a question which may still be seriously raised. Were not the genus *Aster* so all-embracing it would seem better to separate this species from it generically. It has no stamens in the ligulate flowers, the styles are very short and obtuse, the ligules are exceedingly small, and the whole habit of leaf reduction and spiny phyllocladia is peculiar.

**ASTER JAMAICENSIS** Less. (*Erigeron Jamaicensis* L.)—Santa Rosa, Depart. Santa Rosa, 3-4,000<sup>ft</sup>, June 1892, *Heyde & Lux* 3,363. This species of the West Indies has also been found occasionally in southern Mexico. I very much doubt its proper reference to *Aster*.

**CONYZA CORONOPIFOLIA** HBK. (Incl. *C. hirsuta* HBK.)—Chiul, Depart. Quiché, alt. 8,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,378. Exceedingly variable in foliage even on the same plant. Our specimens represent the very hirsute form with linear-lanceolate mostly entire (but frequently 1- or 2-lobed) leaves described by Kunth as *C. hirsuta*, and usually maintained as a distinct species. The two, however, completely intergrade, and different branches of the same plant will sometimes show all the differences between *C. coronopifolia* and *C. hirsuta*.

**MALLINOA**, n. gen. of INULOIDEÆ?—Heads many-flowered, homogamous, the flowers perfect: involucre campanulate, with three or four series of imbricate striate bracts, the outer ones shorter: corolla tubular, somewhat narrower below and with a much constricted and easily separable base, 5-toothed, the teeth hairy outside: anthers appendaged, sagittate at base: style-branches long, clavate and obtuse, the conspicuous hairy appendages representing more than half the length: achenes linear, 5-angled, with a prominent indurated base and constricted above to meet the distinct pappus ring which bears numerous stout barbellate bristles as long as the corolla.

**Mallinoa corymbosa**, n. sp.—Herbaceous, 40 to 50<sup>cm</sup> high, leafy and hairy at base, naked, smooth and corymbosely branching above: leaves opposite, more or less woolly pubescent on both sides, especially along the venation, rather long petioled, ovate and dentate, obtuse, paler and conspicuously reticulate beneath, 3 to 7<sup>cm</sup> long (blade), above reduced to bracts: heads about 5<sup>mm</sup> high, solitary at the ends of the elongated corymbose branches: involucre bracts smooth and striate, oblong, the outer series somewhat shorter, the inner



ones equal, very obtuse, more or less scarious margined: achenes sharply 5-angled, somewhat hairy, especially on the angles.—PLATE V.

Jumaytepeque, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, December 1892, *Heyde & Lux* 4,255.

To decide the affinities of this genus is very perplexing, The style characters are those of EUPATORIACEÆ, and its pappus coalesced at base into a prominent ring suggests the Brazilian genus *Symphypappus* Turcz., but the distinctly sagittate anthers are opposed to such reference. It seems also to resemble certain groups of SENECEIONIDÆ, and this may be the true reference, but the involucre is hardly consistent with it. It is tentatively referred here to INULOIDEÆ, to which group it is as easily referred as *Dimeresia* Gray, with which genus it has a number of important characters in common.

NOCCA SUAVEOLENS Cass. (*Lagascea suaveolens* HBK.).—Carrizal, Depart. Santa Rosa, alt. 5,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4,227. A somewhat variable species, which also includes *L. helianthifolia* HBK., *L. latifolia* DC., and *L. macrophylla* Steud. *Lagascea* Cav. is 1,803, and *Nocca* Cav. is 1,794.

DESMANTHODIUM GUATEMALENSE Hemsley.—Volcan Acatenango, Depart. Zacatepequez, alt. 12,000<sup>ft</sup>, August 1892, *W. C. Shannon* 3,693. The only record I find of this very interesting plant is the original collection by Salvin on Volcan de Fuego, at 6,000<sup>ft</sup>, in which material the achenes were immature. The specimens before me have perfect achenes, which show the oboval-oblong outline of the other species, are perfectly smooth, and become black and hard, but instead of being biconvex in section have a flat face and a prominently angled face, giving a low triangular section.

**Polymnia Quichensis**, n. sp.—Smooth, excepting the more or less roughened leaves, about 1<sup>m</sup> high: leaves ample, opposite, ovate-lanceolate, acuminate, tapering at base to a short petiole, dentate or denticulate (sometimes almost entire), moderately scabrous above and somewhat pubescent beneath, especially upon the conspicuous reticulations (becoming smoother with age), 12.5 to 25<sup>cm</sup> long, 5 to 7.5<sup>cm</sup> wide: heads solitary or few in a terminal corymb whose lateral branches bear at least a pair of ovate (sometimes narrower) acute leaves; the disk about 15<sup>mm</sup> broad: outer involucre bracts broadly ovate and acute: rays 7 to 15, yellow, linear-oblong,



hairy at base, about 2<sup>cm</sup> long: disk-corollas tubular-inflated from near the base, prominently glandular-nerved: achenes 5<sup>mm</sup> long. ✓—Chiul, Depart. Quiché, alt. 8,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,375.

Very closely related to the Chilean *P. glabrata* DC. according to the description in DC. Prodr. 5: 515.

JAEGERIA HIRTA Less. includes *Spilanthus sessilifolia* Hemsley.—San Miguel Uspantán, Depart. Quiché, alt. 6–12,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,395, 3,794, 3,796.

SCLEROCARPUS DIVARICATUS Benth. & Hook. was sent out in a previous distribution as *S. uniserialis*, no. 2,376.

MONTANOA MORITZIANA Sch. Bip.—Coban, Depart. Alta Vera Paz, alt. 4,300<sup>ft</sup>, November 1885, *Tuerckheim* 814. I have not discovered any description of this species, the material having been named from Andean specimens so labelled and distributed by Sonders and by André.

MONTANOA PATENS Gray.—Jumaytepeque, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, December 1892, *Heyde & Lux* 4,216. The specimens are more bushy and profusely flowered than those heretofore collected. The leaves are densely and softly pubescent beneath, glabrous or nearly so above. The species is very near *M. arborescens* DC., to which some of its forms have at times been referred.

**Montanoa Samalensis**, n. sp. — Apparently a suffruticose plant, about 3<sup>m</sup> high; branchlets more or less woolly pubescent (becoming glabrate), the inflorescence densely so: leaves (only upper ones seen) petioled, ovate-lanceolate with a rhombic short-cuneate triplinerved base tapering into a more or less winged petiole, acuminate, crenate or somewhat toothed, scabrous-puberulent above, pubescent beneath, 20 to 30<sup>cm</sup> long (including petiole), 7.5 to 10<sup>cm</sup> broad in widest part; those that subtend or belong to the inflorescence narrowly lanceolate, acute or acuminate, wing-petioled, nearly or quite entire (the lower ones 15 to 17<sup>cm</sup> long): inflorescence a lax leafy few-flowered trichotomous cyme: heads long-peduncled, 7 to 9<sup>mm</sup> high, with about ten narrowly to broadly spatulate white (yellowish in drying), more or less pubescent rays 10 to 15<sup>mm</sup> long: involucreal scales ovate, acute, woolly pubescent: chaff of the receptacle more or less toothed towards the base, broadly truncate, the midrib ciliate on the back and extended as a prominent mucronate point: disk corollas yellow and pubescent. ✓—Rio Samalá, Depart. Retalhulen, alt. 1,700<sup>ft</sup>, April 1892, *John Donnell Smith* 2,858.



In the rhombic base of the leaves there is indication that the lower leaves may be three-lobed.

**Verbesina Donnell-Smithii**, n. sp. of VERBESINARIA.—Pubescent, becoming glabrate, about 5<sup>m</sup> high: stem and branches wingless: leaves ovate to lanceolate, scabrous puberulent above, pubescent beneath, tapering to a more or less winged petiole, acuminate, from sharply serrate or even toothed to almost entire with a few mucronulations, 10 to 20<sup>cm</sup> long, 3 to 5<sup>cm</sup> broad: heads about 10<sup>mm</sup> high, rather numerous in a spreading cyme: involucreal scales oval, obtuse, erect and pubescent: chaff of the receptacle pubescent, as are the very broad and somewhat toothed wings of the achenes above and the stout awns. ✓—San Miguel Uspantán, Depart. Quiché, alt. 6–12,000<sup>ft</sup>, April 1892, *Heyde & Lux* 3,385.

Related to *V. Virginica* L., but distinct enough from the forms of that variable species that I have seen, notably so in the size of its heads.

OTOPAPPUS CURVIFLORUS Hemsley, var. **glabratus**, n. var. Leaves almost entirely glabrous and very long acuminate, only vestiges of the scabrous character above, the lower surface glabrous (instead of woolly pubescent). ✓—Jumaytepeque, Depart. Santa Rosa, alt. 6,000<sup>ft</sup>, November 1892, *Heyde & Lux* 4,235.

*O. curviflorus* Hemsley = *Salmea curviflora* R. Br. and *Zexmenia salmeoides* Sch. Bip. It is a serious question whether *O. curviflorus* should not be the basis of a new genus, for the characters are not strictly those of either *Salmea* or *Otopappus*, although the latter genus was extended by Hemsley to include it.

COREOPSIS GALEOTTII Hemsley was distributed in a previous collection as *C. Mexicana* Hemsley, no. 3,792.

COREOPSIS TRIFOLIATA Bertol.—Buena Vista, Depart. Santa Rosa, alt. 5,500<sup>ft</sup>, December 1892, *Heyde & Lux* 4,193. Apparently reported heretofore only from Volcan de Agua by Velasquez, and described by Bertolini in Fl. Guat.

BIDENS ALAUSENSIS HBK. ?—Embaulada, Depart. Zacatepeque, alt. 5,500<sup>ft</sup>, December 1889, *Heyde & Lux* 4,503; Santiago, same depart., alt. 6,500<sup>ft</sup>, 1891, *Rosalio Gómez*. A number of South American species of *Bidens* appear in the Guatemalan collections, but there is such confusion of descriptions and of specimens in herbaria, that determinations must be tentative. This species has been reported also from S. Mexico.



*BIDENS ANDICOLA* HBK. ?—San Miguel Uspantán, Depart. Quiché, alt. 6,000<sup>ft</sup>, May 1892, *Heyde & Lux* 3,404, 3,788. This reference to a species of the Andes of Ecuador is made with some hesitation, on account of lack of type material. With published descriptions and distributed material it accords fairly well. Perhaps the same reference should be made of *John Donnell Smith* 1,678, from Samac, Depart. Alta Verapaz, alt. 4,600<sup>ft</sup>, but the material is entirely too immature for definite statement.

*BIDENS HIRTELLA* HBK. —Santiago, Depart. Zacatepequez, alt. 6,500<sup>ft</sup>, 1891, *Rosalio Gómez* 1,074. This species seems to have been referred only to Mexico and then doubtfully, as though it had not been rediscovered. The material in hand conforms exactly with the published description, but there has been no opportunity of comparison with authentic specimens.

*BIDENS HUMILIS* HBK. —At the summit of Volcan Acate-nango, Depart. Zacatepequez, alt. 12,400<sup>ft</sup>, August 1892, *W. C. Shannon* 3,691. Heretofore reported only from the mountains of Ecuador. The peduncles and involucre scales are very often hairy, and the heads vary much in size, sometimes becoming as large as those of *B. grandiflora*.

*CALEA INTEGRIFOLIA* Hemsley, var. *dentata*, n. var. Leaves much thinner, glabrous (except perhaps a little sparse pubescence beneath), very narrowly lanceolate to linear, with conspicuous mucronulate teeth, and tapering into a long almost caudate acumination, the leaves subtending the inflorescence elongated. ✓Nebaj, Depart. Quiché, alt. 7,000<sup>ft</sup>, April 1890, *Heyde & Lux* 4,506.

*SCHKUHRIA ANTHEMOIDES* (DC.) (*Hopkirkia anthemoides* DC. *Schkuhria Hopkirkia* Gray).—*Heyde & Lux* 3,802.

*GALEANA HASTATA* Llav. & Lex.—Santa Rosa, Depart. Santa Rosa, alt. 3-4,000<sup>ft</sup>, July 1892, *Heyde & Lux* 3,364. The plants are much more leafy than usual, with larger leaves and a fewer-flowered inflorescence than heretofore recorded.

*TAGETES LUCIDA* Cav.—Santiago, Depart. Zacatepequez, alt. 6,500<sup>ft</sup>, 1891, *Rosalio Gómez* 1,063; 1892, *Heyde & Lux* 3,798. Our 3,798 is more branching than usual, with obconical (rather than cylindrical) involucre which are 7-toothed (rather than 5) and 15 to 17-flowered (instead of 5 to 7), but the intergradations seem to be too complete for varietal separation.

*TAGETES TENUIFOLIA* Cav.—*T. peduncularis* Lag. & Rod.